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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,866	10/19/2001	Paul R. Marshall	GB 010036	4957

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EXAMINER	
RAMAKRISHNAIAH, MELUR	
ART UNIT	**PAPER NUMBER**
2643	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/082,866	MARSHALL ET AL.	
	Examiner	Art Unit	
	Melur Ramakrishnaiah	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10* is/are rejected.

7)☒ Claim(s) *9, 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10-19-01,7-16-02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli (US PAT: 5,991,605) in view of Westergren et al. (US PAT: 5,423,076, hereinafter Westergren).

Regarding claim 1, Rapeli discloses a radio transceiver adapted to transmit and receive on a common frequency, comprising a transmitter (constituted by 507-511, fig. 5) and low IF receiver (constituted by 3-5, fig. 5) further comprising signal generation means (5, 511), the signal generation means comprising a first and second frequency generators (fig. 5), wherein the first frequency generator generates a signal at a normal carrier frequency (f1, fig. 5) during reception and transmission, wherein the second frequency generator generates an offset signal (f2, fig. 5) which during reception is at a low IF frequency, and wherein during reception the signal is generated by the first frequency generator is combined with the offset signal to produce down-conversion signal (col. 2, line 54 – col. 4, line 67).

Rapeli differs from claim in that he does not explicitly teach the following: half duplex radio transceiver.

However, Westergren discloses superhetrodyne transceiver with first bilateral first mixer and dual phase locked loop frequency control which teaches the following: half duplex radio transceiver (col. 2 lines 11-18).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Rapeli's system to provide for the following: half duplex radio transceiver as this arrangement would provide another well known means of transmitting and receiving signals as taught by Westergren.

Regarding claims 2-5, 7, Rapeli further teaches the following: during transmission the signal generated by the first frequency generator is directly modulated by an information signal, during transmission the offset signal (f2, fig. 5) is modulated by an information signal and signal generated by the first frequency generator (5, fig. 5) is modulated by the modulated offset signal thereby producing modulated signal, second frequency generator is locked to a frequency reference during reception , a control signal to the locked second frequency generator is sampled during reception, and sampled control signal is used to control the frequency modulation deviation during transmission, the second frequency generator comprises a voltage controlled oscillator (511, fig. 5), first frequency generator (5, fig. 5) comprises an oscillator operating at the normal carrier frequency (col. 2, line 54 – col. 4, line 67).

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli in view of Westergren as applied to claim 1 above, and further in view of Strolle et al. (US PAT: 5,619,154, hereinafter Strolle).

Regarding claim 6, the combination does not teach the following: the second frequency generator comprises a numerically controlled oscillator.

However, Strolle discloses numerical voltage controlled voltage oscillator which teaches the following: frequency generator comprises a numerically controlled oscillator (col. 2 lines 31-50).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: the second frequency generator comprises a numerically controlled oscillator as this arrangement would provide better voltage controlled oscillator as taught by Strolle (col. 2 lines 24-27)/

4. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over as applied to claim 1 above, and further in view of Darabi et al. (US PAT: 6,404,293, provisional application No. 60/160,806, filed 0n 8-8-1999, hereinafter Darabi).

The combination differs from claim 8 in that it does not teach the following: oscillator coupled to a division element which delivers phase and quadrature signal components at the normal carrier frequency.

However, Darabi discloses adaptive radio transceiver with a local oscillator which teaches the following: oscillator coupled to a division element which delivers phase and quadrature signal components at the normal carrier frequency (fig. 2, col. 6 lines 51-57, and col. 17 lines 9-24).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: oscillator coupled to a division element which delivers phase and quadrature signal components

at the normal carrier frequency as this arrangement would provide another well known means for processing signals in a transceiver as taught by Darabi.

Regarding claim 10, the combination does not teach the following: an integrated circuit comprising a radio transceiver as in claim 1.

However, Darabi teaches implementing a transceiver by an integrated circuit (fig. 2, col. 5 lines 32-35).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: an integrated circuit comprising a radio transceiver as in claim 1 as this arrangement would provide for compact implementation of transceiver that is suitable for wireless portable applications as taught by Darabi.

5. Claims 9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melur Ramakrishnaiah whose telephone number is (703) 305-1461. The examiner can normally be reached on M-F 6:30-4:00; every other F Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703)305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melur Ramakrishnaiah
Primary Examiner
Art Unit 2643